EUDEM Research Survey

EUDEM2 Questionnaire2
(Research Centers/University Labs/Governments (R&D))

PART I: Relationship with military/humanitarian demining. Problem knowledge. DATE:27/3/03

Organisation (name + web address) Royal Military Academy www.sic.rma.ac.be
Contact Person (name + e-mail): Marc Acheroy acheroy@elec.rma.ac.be
Ask a business card!

Level of knowledge/understanding in military demining: 3 (1:none, 5: in depth)

Level of knowledge/understanding in humanitarian demining: 5 (1:none, 5: in depth)

No. of years involved in HD: 8 (since 1996)

Details (type of involvement): Research & Development

Main sources of information on humanitarian demining:
X direct contacts with deminers, (1:little, 5: mostly used) 4
X field visits, (1:little, 5: mostly used) 4
X literature, (1:little, 5: mostly used), which literature source is used on a frequent basis 5
Journal: JMU – MAIC, Newsletter HI, Reports NATO – CCMAT reports + newsletter
X Internet, (1:little, 5: mostly used), which site is used on a frequent basis 4
Web address: GICHD, Eudem2, JMU, UN - UNMAS

Frequency of field visits:
1: none;
2: sporadically (once a year)
X: regularly (several times a year)

Where: indicate geographical zones/countries: Balkan area + sporadically Africa

Frequency of contacts with deminers:
1: none;
2: sporadically (once a year)
X: regularly (several times a year)

Who (names + contact details): DOVO – NPA - HI

Knowledge of demining operations: 5 (1:none, 5: in depth)
(ex. SOPs (Standard Operating Procedures))

Details: Activity – try to enhance the way of understanding new technologies for HD & how it can be affected by technology

Knowledge of deminers' requirements: 5 (1:none, 5: in depth)
(ex. SORs (Statements Of Requests), "wish lists")

Details: requirements of end users are essential for R & D carried out

Financial Sources of your research activities (who is financing the research carried out):
MOD – EC – Development Aid – OSTC/DWTC

Would you like to know more on humanitarian demining (yes/no/yes and already planned): No, own sources available
What and at which frequency:
O ad hoc courses,
O field visits;
O weekly
O monthly updates

Knowledge of the UXO problem (UneXploded Ordnance): 5 (1:none, 5: in depth)
Specialist – responsible/adviser for dismantling unit in Poelkapelle (BE)
Chamber for destruction of chemical UXOs – with respect for the environment
UXO problem taken into account in your research: yes (1:no, 5: fully)
How has it been taken into account? (describe)
Fully in the context of research LM + UXO

Technologies studied (list which ones) :
X GPR
X MD Hope : MD + GPR + Radiometer
X Combined multi sensor detection systems (details, which sensors): Test results TNO : IR – MD - GPR
O mechanical equipment (Baudoin)
O remotely operated detection systems (Baudoin) SMART : - Synthetic Ap. Radar (SAR)
X remotely operated area reduction systems SMART - Multispectral
O chemical systems (eg. Biosensor)
X Radiometer microwave

Kind of research (fundamental): most – data fusion definition
O Short Term
X Long Term

In which application areas:
X hand held
X vehicle based
X airborne
O

Aimed at
X AP
X AT
X UXO
O

Overlaps between technologies from other application domains (e.g. medical/geoscience): which ones and how?

SMART – Paradis (OSTC), Risk management, geoscience (GIS, decision models)

Research activities related to a specific country or area: no, EC project Croatia
(ex. Cambodia) Paradis (Mozambique, Laos (BE deminers Active for clearing UXO's)

PART II: Knowledge of other (R&D) activities, esp. EC.

Knowledge of ongoing EC R&D projects related to humanitarian demining: 5 (1:none, 5: in depth)

Knowledge of other R&D projects related to humanitarian demining: 5 (1:none, 5: in depth)

Details: Netherlands, TU Delft (GPR) Onera France (GPR) + (SAR), UK NQR, GPR, Germany (DLR) Radiometer + MD (new from Vallon) support MD industry in Germany call open in May Karlsruhe

Would you like to know more on current research activities
X yes
O no
O yes and already planned:

What and at which frequency:
O newsletter,
O workshop,
O conference,
O e-mail;
All sources are already available
Wants to collaborate with HS (ETRO-EUDEM2)
O weekly updates
O monthly updates

Preference for "push" or "pull" technique:
(ex. receiving possibly unsorted e-mail, or looking up oneself and selecting the information)

PART III: Involvement in Product/System testing.

Have you already been involved in equipment testing: Yes, new project CCMAT – TNO Modelling MD

Standard CEN/JRC to compare performance of MD's but not performance assessment of single MD in given scenarios– applied to the needs for modelling performance
(yes, ongoing)

Details: A good model needs to be developed for MD – Soil (CCMAT – TNO).
Standards development that could be used for MD in given scenarios need to enhance the current standard.
Same needs to be done for IR GPR Etc.

Do you have own test facilities? (Yes/no) YES

Which ones?
X sand box indoor
O sand box with environmental control facilities indoor
X sand box outdoors
O sand box with environmental control facilities outdoors
X dummy minefields in controlled conditions
X dummy minefields in less controlled conditions (eg. Croatia, Angola etc)

What kind of tests are performed?
MD Imaging, GPR, ground measurements from GPR measurements, derived soil measurements (in collaboration with UCL)

and how?
X own test methods
O ITEP proposed methods
O nationally indicated methods?
O
O

Is any further equipment testing planned: ? this depends on the funding, no planning available right now
(none; in the lab, under internal controlled conditions, under external controlled conditions, in the field)

Details: soil trials, planning depends on request

Type of product/system at which you are aiming + indication of how (with which funding/partners):

What is the state of maturity of your programme? Hope/SMART (purely applied research)

X Research, only research + modelling, no prototyping activities
X Breadboard (preliminary assembly of hardware to prove feasibility of proposed system, without regard to packaging, reliability or, often, safety).
O Prototype, modelling prototyping
O Pre-Production,
O Production (if so what volume has been produced to date and what is the planned production rate per annum).

What further budget will you require to reach each stage? Not relevant

Have you used your: equipment / prototypes / research breadboards on test sites? Yes

What test sites? Bosnia (Hope, Smart DLR equipment) -
How many mines? 170 targets – mines + debris
What type?
PROM, PMN, Balkan mines (put there by NPA) Testbed copied in Meerdaal from Bosnia, also used by D. Daniels
What performance statistics did you obtain? Testing was aimed at tuning of system not to evaluate performance

What sample set size did you use? (tuning of system not to evaluate performance)

What soil weather conditions did you use?
Summer/warm – dry – sandy + stones soil + one with grass
How did the operators perform?

OK (according to NPA)

What was their response / performance
Breadboard system (5 laptops used Ethernet connections)

Assuming budget availability, how soon could you personally carry out demining operations with your equipment? in days, weeks months years?

Hope ? not ready (demonstrator system)
2 – 3 years extra needed

Are you taking into account social studies:
X socio-economic surveys/ Paradis (priority assessment and planning of demining activities)
X environmental factors/
O physical limitations of the technologies/ not yet – will be taken into account soon
X operational scenarios:

How: Build a system compatible with IMSMA where images can be entered and also context information. This is for the high level (priority of country). The system should go down until the low level (demining teams)

Do you disseminate the results? yes

How?
X Participation to conference
X Scientific Journals
O other specialised publications
X JMU/MAIC?

Comments on the EUDEM2 initiative in general: Very good initiative – access info is very good/complete/fast for non-Specialists + Specialists. Missing connection with ARIS. How will it be continued after funding? EUDEM2 should be a continuous action !

Questionnaire: OK but needs to be complemented through personal contacts

Comments on the concept of an Open, Detailed Web based Database/Information Center (ex. EUDEM2):

Should be continued until the mine problem is solved

For EC projects only: what exploitation plans exist and when will the first pre-production models be available for evaluation? SMART yes – Hope no.
(Vallon wanted to enhance the MD so there is one for HD for sure)

Comments on the way EC projects are financed, suggestions:
They are not building on the past.
There is a big problem of the existing market (death valley between developers and end-users)

*****Please send us a copy of your reference material together with the fully approved complete questionnaire by separate mail to the following address:*

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